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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/782,565	02/19/2004	Andreas Weber	15436.212.1	5154
22913	7590	06/29/2006	EXAMINER	
WORKMAN NYDEGGER (F/K/A WORKMAN NYDEGGER & SEELEY) 60 EAST SOUTH TEMPLE 1000 EAGLE GATE TOWER SALT LAKE CITY, UT 84111			BELLO, AGUSTIN	
			ART UNIT	PAPER NUMBER
			2613	

DATE MAILED: 06/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/782,565

Applicant(s)

WEBER, ANDREAS

Examiner

Agustin Bello

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13-17 is/are allowed.
- 6) ☒ Claim(s) 1-12 and 18-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-2, 5, 7-8, 18, 19, and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Kamei (U.S. Patent No. 6,718,140).

Regarding claims 1, Kamei teaches a bi-directional communications module configured for propagating transmission and reception of optical data along dual optical cables, the module comprising: a first transmitter (reference numeral 45 in Figure 1) configured for transmitting data on a first wavelength channel (e.g. λ_3 in Figure 1) onto a first optical fiber (reference numeral 70 in Figure 1); a first receiver (reference numeral 53 in Figure 1) configured for receiving data on a second wavelength channel (e.g. λ_4 in Figure 1) from the first optical fiber (reference numeral 70 in Figure 1); a second transmitter (reference numeral 46 in Figure 1) configured for transmitting data on the second wavelength channel (λ_4 in Figure 1) on a second optical fiber (reference numeral 71 in Figure 1); and a second receiver (reference numeral 54 in Figure 1)

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configured for receiving data on the first wavelength channel (λ_3 in Figure 1) from the second optical fiber (reference numeral 71 in Figure 1), wherein the first transmitter, the second transmitter, the first receiver, and the second receiver comprise a bi-directional communications module (reference numeral 41 in Figure 1).

Regarding claims 2, 19, Kamei teaches that the first transmitter and the first receiver comprise a first bi-directional transceiver (reference numeral 45, 53 in Figure 1) and the second transmitter and the second receiver comprise a second bi-directional transceiver (reference numeral 46, 54 in Figure 1).

Regarding claim 5, Kamei teaches that the first receiver comprises a photodetector (reference numeral 53 in Figure 1).

Regarding claim 7, 22, Kamei teaches that the first wavelength channel (e.g. λ_3 in Figure 1) and the second wavelength channel (e.g. λ_4 in Figure 1) are of sufficiently different wavelengths to prevent the receivers from experiencing optical crosstalk due to internal reflection from the outgoing optical signals (inherent in that $\lambda_3 \neq \lambda_4$ in Figure 1).

Regarding claim 8, Kamei teaches first and second duplex connectors (reference numeral 61, 62 in Figure 1) that are configured to mate with connectors affixed to the first optical fiber and the second optical fiber.

Regarding claim 18, Kamei teaches providing a legacy optical system that comprises first (reference numeral 70, 74 in Figure 1) and second optical cables (reference numeral 71, 75 in Figure 1), each of the first and second optical cables comprising connectors at each terminus of the optical cables (reference numeral 61, 62 in Figure 1); connecting a first bi-directional communications module (reference numeral 41 in Figure 1) on adjacent ends of each of the first

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and second optical cables and connecting a second bi-directional communications module (reference numeral 43 in Figure 1) to the opposing adjacent ends of each of the first and second optical cables, the first bi-directional communications module comprising: connectors that are compatible with the connectors on the first and second optical cables (inherent); a first transmitter (reference numeral 45 in Figure 1) configured for transmitting data on a first wavelength channel onto the first optical cable (e.g. λ_3 in Figure 1), a first receiver (reference numeral 53 in Figure 1) configured for receiving data on a second wavelength channel from the first optical cable (e.g. λ_4 in Figure 1); a second transmitter (reference numeral 46 in Figure 1) configured for transmitting data on the second wavelength channel on the second optical cable (e.g. λ_4 in Figure 1); and a second receiver (reference numeral 54 in Figure 1) configured for receiving data on the first wavelength channel on the second optical cable (e.g. λ_3 in Figure 1).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamei in view of Bhagavatula (U.S. Patent No. 4,889,404).

Regarding claims 3 and 20, Kamei differs from the claimed invention in that Kamei fails to specifically teach that the first bi-directional transceiver comprises a first beam splitter for reflecting only one of the first or second wavelength channels while permitting passage

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therethrough of the non-reflected wavelength channel; and the second bi-directional transceiver further comprises a second beam splitter for reflecting only one of the first or second wavelength channels while permitting passage therethrough of the non-reflected wavelength channel.

However, the use of beam-splitters for such an operation is well known in the art. Bhagavatula, in the same field of optical communication teaches that this use is well known in the art (reference numeral 17-2 in Figure 1; reference numeral 16-1 in Figure 1). One skilled in the art would have been motivated to employ beam splitters as taught by Bhagavatula in the device of Kamei in order to simultaneous bi-directional transmission and reception, a feature sought by Kamei (column 7 lines 28-43). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to include a first and second beam splitter as taught by Bhagavatula.

6. Claims 4, 6, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamei.

Regarding claims 4, 21, Kamei differs from the claimed invention in that Kamei fails to specifically teach that the module is compatible with small form factor pluggable (SFP) standards. However, the small form factor pluggable (SFP) standard is well known in the art. One skilled in the art would have been motivated to craft the module of Kamei to be compatible with small form factor pluggable (SFP) standards in order to reduce the overall footprint go the module, thus conserving space. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to craft the module of Kamei to be compatible with small form factor pluggable (SFP) standards.

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Regarding claim 6, Kamei teaches the use of a laser (reference numeral 15-1, 15-2 in Figure 1), but differs from the claimed invention in that Kamei fails to specifically teach that the laser is selected from a group consisting of a distributed feedback laser and a Fabry-Perot laser. However, both of these lasers are very well known in the art and readily available. One skilled in the art would have been motivated to select the laser from the group claimed since these types of laser are readily available and relatively inexpensive. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to select the laser from a group consisting of a distributed feedback laser and a Fabry-Perot laser.

7. Claims 9, 11, 12, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamei in view of Hoag (U.S. Patent No. 5,712,936) and the prior art cited by the applicant in the specification.

Regarding claims 9 and 23, as noted in the rejection of claim 1, Kamei teaches a first and second bi-directional transceiver and the accompanying elements. Kamei differs from the claimed invention in that Kamei fails to specifically teach the use of a duplex connector configured for receiving a duplex optical cable having a first optical fiber and second optical fiber, connecting the first and second transceiver/receivers therethrough. However, Hoag in the same field of optical communication teaches a one such duplex connector (see Figures and throughout Hoag). Furthermore, as noted by the applicant in the specification (page 4 paragraph [0010]), cables having first and second optical fibers therein are well known in the art and readily available. One skilled in the art would have been motivated to employ a duplex connector such as that taught by Hoag and the paired fiber cable well known in the art, in order to increase the amount of data throughput. Therefore, it would have been obvious to one skilled

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in the art at the time the invention was made to employ a duplex connector such as that taught by Hoag and the well known paired fiber cable in the device of Kamei.

Regarding claim 11, 23, Kamei differs from the claimed invention in that Kamei fails to specifically teach that the module is compatible with small form factor pluggable (SFP) standards. However, the small form factor pluggable (SFP) standard is well known in the art. One skilled in the art would have been motivated to craft the module of Kamei to be compatible with small form factor pluggable (SFP) standards in order to reduce the overall footprint of the module, thus conserving space. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to craft the module of Kamei to be compatible with small form factor pluggable (SFP) standards.

Regarding claim 12, Kamei teaches that the first wavelength channel (e.g. λ_3 in Figure 1) and the second wavelength channel (e.g. λ_4 in Figure 1) are of sufficiently different wavelengths to prevent the receivers from experiencing optical crosstalk due to internal reflection from the outgoing optical signals (inherent in that $\lambda_3 \neq \lambda_4$ in Figure 1).

8. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kamei in view of Hoag (U.S. Patent No. 5,712,936), the prior art cited by the applicant in the specification (AAPA), and Bhagavatula.

Regarding claim 10, the combination of Kamei, Hoag, and AAPA differs from the claimed invention in that Kamei fails to specifically teach that the first bi-directional transceiver comprises a first beam splitter for reflecting only one of the first or second wavelength channels while permitting passage therethrough of the non-reflected wavelength channel; and the second bi-directional transceiver further comprises a second beam splitter for reflecting only one of the

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first or second wavelength channels while permitting passage therethrough of the non-reflected wavelength channel. However, the use of beam-splitters for such an operation is well known in the art. Bhagavatula, in the same field of optical communication teaches that this use is well known in the art (reference numeral 17-2 in Figure 1; reference numeral 16-1 in Figure 1). One skilled in the art would have been motivated to employ beam splitters as taught by Bhagavatula in the device of Kamei in order to simultaneous bi-directional transmission and reception, a feature sought by Kamei (column 7 lines 28-43). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to include a first and second beam splitter as taught by Bhagavatula.

Allowable Subject Matter

9. Claims 13-17 are allowed.

Response to Arguments

10. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Agustin Bello whose telephone number is (571) 272-3026. The examiner can normally be reached on M-F 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571)272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AB


AGUSTIN BELLO
PRIMARY EXAMINER